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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,912	03/26/2004	Lih-Ping Li	67,200-1256	9403

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TUNG & ASSOCIATES
Suite 120
838 W. Long Lake Road
Bloomfield Hills, MI 48302

EXAMINER	
MARKHAM, WESLEY D	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/810,912	LI ET AL.	
	Examiner	Art Unit	
	Wesley D. Markham	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/19/2005 (the RCE)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application on 10/19/2005 (certificate of transmission dated 7/27/2005) after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action mailed on 4/13/2005 has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/13/2005 has been entered.

Response to Amendment

2. Acknowledgement is made of the amendment filed by the applicant on 6/13/2005, in which Claims 1 – 5 and 7 – 13 were amended. **Claims 1 – 13** remain pending in U.S. Application Serial No. 10/810,912, and an Office action on the merits follows.

Drawings

3. The formal drawings (2 sheets, 3 figures) filed by the applicant on 3/26/2004 are acknowledged and approved by the examiner.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 3 – 6, 8 – 10, 12, and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.
6. Specifically, amended **Claims 1, 3 – 6, 8 – 10, 12, and 13** all recite that the seasoning film is provided on the interior surfaces of the chamber by introducing precursor gases selected from, for example, (1) dichlorosilane and a <u>nitrogen-containing gas</u> (e.g., to form a silicon nitride seasoning film), and (2) trimethylsilane and a <u>carbon-containing gas</u> (e.g., to form a silicon carbide seasoning film). However, the originally filed specification only disclosed forming a silicon nitride film from dichlorosilane and <u>ammonia</u> (see paragraphs [0022], [0031], and [0040] of the specification) and forming a silicon carbide film from trimethylsilane and <u>carbon dioxide</u> (see paragraphs [0031] and [0040]). There is no original disclosure (either explicit, implict, or inherent) of using the broad genus of "nitrogen-containing gas" or "carbon-containing gas" to deposit a silicon nitride or silicon carbide seasoning film, respectively. The disclosure of a single species of nitrogen-containing gas (i.e., ammonia) and a single species of carbon-containing gas (i.e., carbon dioxide) is not sufficient to reasonably convey to one skilled in the art that the applicant originally had possession of the broad genus of gases now claimed. Please note that Claims

2, 7, and 11 have not been rejected on this basis because the originally filed specification does have support for depositing a silicon dioxide seasoning film from silane and an oxygen-containing gas (see paragraph [0021] of the specification).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al. (USPN 5,811,356) in view of Rajagopalan et al. (USPN 6,274,058), Hander et al. (USPN 6,403,501), and Ying et al. (US 2003/0013314 A1).

10. Regarding **Claims 1 and 2**, Murugesh et al. teaches a method of seasoning a process chamber having interior surfaces (see Figure 1), the method comprising the steps of (1) cleaning the process chamber, and (2) providing a seasoning film on the interior surfaces of the process chamber by introducing precursor gases such as silane and an oxygen-containing gas into the process chamber, wherein the seasoning film comprises silicon dioxide (Abstract, Figures 1 and 2; Col.1, line 30 – Col.2, line 67; Col.3, lines 10 – 26; Col.3, line 55 – Col.4, line 16; Col.4, line 65 – Col.5, line 44). Murugesh et al. does not explicitly teach that (1) the seasoning film has a thickness of from about 2 microns to about 10 microns, and (2) the chamber pressure is from about 10 Torr to about 760 Torr. Specifically, Murugesh et al. is silent regarding the chamber pressure, but regarding issue (1), Murugesh et al. teaches that it is desirable to increase the seasoning time up to about 110 seconds (almost 2 minutes) so that a relatively thick seasoning film is deposited on the interior of the chamber, thereby isolating the chamber walls from the substrate and lowering the metal contamination by about one order of magnitude (Abstract, Cols.1 – 3, Col.4, lines 1 – 4, Col.5, lines 1 – 44, Col.9, lines 54 – 55, Col.10, lines 32 – 43). A longer time may be employed, but if the seasoning film becomes too thick, it may undesirably flake off (Col.3, lines 44 – 48). In other words, Murugesh et al. teaches that the seasoning film deposition time and the associated seasoning film thickness (longer deposition time = greater thickness) are result-effective variables that must be balanced to minimize chamber contamination, which is achieved by increasing the deposition time (e.g., to 110 seconds) / film thickness, while avoiding the

deposition of an overly thick film that may flake off. Additionally, Rajagopalan et al. teaches that, when depositing a seasoning film on the interior surfaces of a process chamber (i.e., a process analogous to that of Murugesh et al.), the particular thickness of the seasoning film will vary depending on the chamber and the type of film being deposited (Col.13, lines 66 – 67, Col.14, lines 1 – 28). Hander et al. teaches that it was known in the art at the time of the applicant's invention to season a process chamber by depositing a seasoning film having a thickness of, for example, approximately 1 to 3 microns, or between approximately 10 and 30 microns, on the interior surfaces of the chamber, and the thickness of the seasoning film is determined, at least in part, by whether the chamber has been freshly wet-cleaned (i.e., a thicker seasoning film for initial conditioning) or whether the chamber has simply been plasma cleaned or idling (i.e., a thinner seasoning film for periodic conditioning) (Abstract, Col.2, lines 26 – 40, Col.3, lines 1 – 44, Col.4, lines 22 – 45). The conventional seasoning film thickness values taught by Hander et al. overlap or lie inside the applicant's claimed range of about 2 microns to about 10 microns. Based on the above teachings, it would have been obvious to one of ordinary skill in the art to optimize the seasoning film thickness (and the seasoning film deposition time) as a result-effective variable through routine experimentation in order to form a seasoning film that advantageously minimizes chamber contamination, as desired by Murugesh et al. One of ordinary skill in the art would have optimized the seasoning film thickness to have a value within the applicant's claimed range (e.g., about 2 microns to about 10 microns) because Hander et al. teaches that CVD

chamber seasoning films having such a thickness are operable. The exact thickness of the seasoning film would, of course, depend on a variety of factors, including (1) the type of chamber, and (2) the type of film being deposited, as taught by Rajagopalan et al. Regarding the chamber pressure limitation, Ying et al. teaches that, in the art of depositing a seasoning film on the inner surfaces of a chamber, process variables for performing the chamber seasoning including gas flow rates, process chamber pressure, process chamber temperature, RF (plasma) power levels, etc. can be selected to achieve optimal chamber seasoning, and such optimization can be performed with minimal experimentation (paragraph [0079]). In other words, Ying et al. teaches that chamber seasoning process parameters such as chamber pressure and temperature are result-effective variables that influence the effectiveness of the chamber seasoning process. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the chamber seasoning process parameters such as chamber pressure and temperature in the process of Murugesh et al. as result-effective variables through routine experimentation, as taught by Ying et al. The exact pressure and temperature would, of course, be expected to depend on a variety of factors, including the type of chamber being seasoned and the type of seasoning film being deposited.

11. Claims 5 – 7, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al. (USPN 5,811,356) in view of Yoo et al. (USPN 6,479,098 B1),

in further view of Rajagopalan et al. (USPN 6,274,058), Hander et al. (USPN 6,403,501), and Ying et al. (US 2003/0013314 A1).

12. Regarding independent **Claims 5 and 10**, Murugesh et al. teaches a method of seasoning a CVD chamber having interior surfaces and a gas distribution plate "18" (Figure 1, Col.1, lines 43 – 67), the method comprising the steps of (1) cleaning the chamber, and (2) providing a seasoning film on the interior surfaces of the chamber by introducing seasoning film precursor gases such as silane and an oxygen-containing gas into the chamber (Abstract, Figures 1 and 2; Col.1, line 30 – Col.2, line 67; Col.3, lines 10 – 26; Col.3, line 55 – Col.4, line 16; Col.4, line 65 – Col.5, line 44). Murugesh et al. does not explicitly teach that the gas distribution plate is coated with the seasoning film. However, the goal of Murugesh et al. in depositing the seasoning film is to block / reduce possible contamination in the chamber (Col.2, lines 50 – 55, Col.3, lines 18 – 20). Murugesh et al. teaches that this is done by depositing the seasoning film onto components and internal surfaces of the chamber forming the processing region (Col.2, lines 49 – 56), or in other words, the chamber components that are exposed to the process environment (Col.5, lines 9 – 12). Yoo et al. teaches an analogous method of depositing a seasoning film on the interior components / surfaces of a CVD chamber and teaches that the seasoning film should be deposited over <u>all of the chamber processing region components, including the gas inlets</u>, because all of the aforementioned components, including the gas inlets, are sources of contaminant material that contaminate the processing environment and detrimentally affect the substrates processed therein (Col.1, lines

33 – 35 and 47 – 67, Col.2, lines 1 – 21, and Col.3, lines 44 – 67). Therefore, it would have been obvious to one of ordinary skill in the art to deposit the seasoning film of Murugesh et al. on all of the internal surfaces of the CVD chamber that form the processing region, including the gas distribution plate, with the reasonable expectation of successfully and advantageously preventing undesired contamination in the chamber that originates from any of the internal surfaces of the CVD chamber, including the gas distribution plate, as taught by Yoo et al. In other words, one of ordinary skill in the art would have been motivated to deposit the seasoning film onto the gas distribution plate in the process / apparatus of Murugesh et al. in order to ensure that no contamination originates from the gas distribution plate, which forms part of the processing region on which the seasoning film is advantageously deposited in Murugesh et al. Murugesh et al. does not explicitly teach that (1) the seasoning film has a thickness of from about 2 microns to about 10 microns, (2) the chamber pressure is from about 10 Torr to about 760 Torr, (3) the temperature is from about 500° C to about 700° C, and (4) the process time is from about 0.5 minutes to about 10 minutes. However, such limitations would have been obvious to one of ordinary skill in the art in view of the teachings of Rajagopalan et al., Hander et al., and Ying et al. for the reasons set forth in paragraph 10 above. Regarding **Claims 6, 7, and 11**, Murugesh et al. also teaches that the seasoning film comprises an oxide-based material such as silicon dioxide (Col.2, lines 58 – 61, Col.5, lines 12 – 15).

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al. (USPN 5,811,356) in view of Rajagopalan et al. (USPN 6,274,058), Hander et al. (USPN 6,403,501), and Ying et al. (US 2003/0013314 A1), further in view of Tsui (USPN 5,891,799) and either Xi et al. (USPN 6,323,119 B1) or Rossman et al. (USPN 6,121,161).

14. The combination of Murugesh et al., Rajagopalan et al., Hander et al., and Ying et al. teaches all the limitations of **Claim 3** as set forth above in paragraph 10, except for a method wherein the seasoning film comprises <u>silicon nitride</u> produced from <u>dichlorosilane and a nitrogen-containing gas</u>. Specifically, Murugesh et al. teaches a silicon dioxide seasoning film from silane and oxygen (Col.2, lines 58 – 61, Col.5, lines 12 – 15). However, Murugesh et al. also teaches that the aforementioned process recipe is only illustrative and other process recipes may be used (Col.5, lines 16 – 19). Specifically, Murugesh et al. teaches that the seasoning film deposition process is typically carried out by depositing the seasoning film in accordance with the deposition process recipe (i.e., the process recipe used to deposit material on the substrate in the subsequent process step) (Col.2, lines 55 – 57, Col.5, lines 20 – 26). Tsui teaches depositing silicon nitride by PECVD or HDP-CVD by using a reactant gas mixture of dichlorosilane and ammonia (i.e., the same reactant gases disclosed and claimed by the applicant) (Col.5, lines 43 – 49). Xi et al. teaches that, in the art of depositing seasoning films on the inner surfaces of a CVD reaction chamber to prevent contamination of the processing environment, the seasoning film can be FSG (i.e., fluorosilicate glass, or a silicon oxide based

material) or silicon nitride (Col.3, lines 12 – 22, Col.4, lines 27 – 67, Col.11, lines 58 – 67, and Col.12, lines 1 – 16). In other words, Xi et al. teaches the functional equivalence of a silicon nitride seasoning film and a glass (i.e., oxide) based seasoning film, as taught by Murugesh et al. Rossman et al. teaches that, in the art of depositing seasoning films on the inner surfaces of a CVD reaction chamber to prevent contamination of the processing environment, a silicon nitride seasoning film is preferable to a conventional seasoning film such as silicon oxide (as taught by Gupta) because the silicon nitride film has a lower diffusion rate for typical contaminants in relation to silicon oxide (Col.2, lines 25 – 63, Col.3, lines 16 – 32, Col.8, lines 54 – 67, and Col.9, lines 17 – 21). Based on these teachings, it would have been obvious to one of ordinary skill in the art to deposit a silicon nitride seasoning film as opposed to a silicon oxide seasoning film in the process of Murugesh et al. with, at the very least, the reasonable expectation of success and obtaining similar results (i.e., because Xi et al. teaches the functional equivalence of various seasoning films, including silicon nitride, in preventing CVD chamber contamination), or with the reasonable expectation of obtaining the advantages of using a silicon nitride seasoning film (as taught by Rossman et al.) as opposed to a silicon oxide seasoning film, such as more effectively preventing chamber contamination due to the low diffusion of contaminants through the silicon nitride seasoning film. In depositing this seasoning film, one of ordinary skill in the art would have been motivated to utilize the process gases claimed by the applicant (i.e., dichlorosilane and a nitrogen-containing gas) because Tsui teaches that such a

process gas recipe is used to deposit silicon nitride films on a substrate, and Murugesh et al. teaches that the seasoning film deposition process is carried out in accordance with the deposition process recipe.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al. (USPN 5,811,356) in view of Rajagopalan et al. (USPN 6,274,058), Hander et al. (USPN 6,403,501), and Ying et al. (US 2003/0013314 A1), further in view of Lee et al. (USPN 6,890,850) and Boeglin (USPN 5,061,514).

16. The combination of Murugesh et al., Rajagopalan et al., Hander et al., and Ying et al. teaches all the limitations of **Claim 4** as set forth above in paragraph 10, except for a method wherein the seasoning film comprises <u>silicon carbide</u> produced from <u>trimethyl silane and a carbon-containing gas</u>. Specifically, Murugesh et al. teaches a silicon dioxide seasoning film from silane and oxygen (Col.2, lines 58 – 61, Col.5, lines 12 – 15). However, Murugesh et al. also teaches that the aforementioned process recipe is only illustrative and other process recipes may be used (Col.5, lines 16 – 19). Specifically, Murugesh et al. teaches that the seasoning film deposition process is typically carried out by depositing the seasoning film in accordance with the deposition process recipe (i.e., the process recipe used to deposit material on the substrate in the subsequent process step) (Col.2, lines 55 – 57, Col.5, lines 20 – 26). Lee et al. teaches depositing a silicon carbide film by plasma CVD by supplying trimethyl silane and carbon dioxide (i.e., the same gases disclosed and claimed by the applicant) to a process chamber (Col.7, lines 10 – 21).

Boeglin teaches that it was known in the semiconductor / microelectronics art (i.e., the art of Murugesh et al.) at the time of the applicant's invention to deposit a silicon carbide layer on a wafer by plasma CVD (i.e., PECVD) (Abstract, Col.1, lines 17 – 24, Col.2, lines 47 – 49, and Col.3, lines 1 – 12 and 55 – 66). Boeglin further teaches that, in a preferred embodiment, the reaction chamber is prepared for film (i.e., silicon carbide) deposition by the preliminary step of passivating the chamber with a silicon carbide coating (Col.3, lines 12 – 16). Therefore, it would have been obvious to one of ordinary skill in the art to deposit a silicon carbide seasoning film, as opposed to a silicon oxide seasoning film (as taught by Murugesh et al.), on the occasion that a silicon carbide film (as opposed to a silicon oxide film) is to be subsequently deposited on a substrate / wafer in the plasma CVD chamber of Murugesh et al. because (1) Murugesh et al. teaches that the seasoning step will typically be carried out according to the same process gas recipe that is used in a subsequently deposited PECVD layer, and (2) Boeglin supports this teaching by specifically teaching that, prior to depositing a silicon carbide layer on a semiconductor substrate by PECVD in a chamber, the chamber should be coated with the same silicon carbide layer. In depositing this seasoning film, one of ordinary skill in the art would have been motivated to utilize the process gases claimed by the applicant (i.e., trimethyl silane and a carbon-containing gas) because Lee et al. teaches that such a process gas recipe is used to deposit silicon carbide films on a substrate, and Murugesh et al. teaches that the seasoning film deposition process is carried out in accordance with the deposition process recipe.

17. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al. (USPN 5,811,356) in view of Yoo et al. (USPN 6,479,098 B1), further in view of Rajagopalan et al. (USPN 6,274,058), Hander et al. (USPN 6,403,501), and Ying et al. (US 2003/0013314 A1), and in further view of Tsui (USPN 5,891,799) and either Xi et al. (USPN 6,323,119 B1) or Rossman et al. (USPN 6,121,161).

18. The combination of Murugesh et al., Yoo et al., Rajagopalan et al., Hander et al., and Ying et al. teaches all the limitations of **Claims 8 and 12** as set forth above in paragraph 12, except for a method wherein the seasoning film comprises silicon nitride deposited from dichlorosilane and a nitrogen-containing gas. However, depositing a silicon nitride seasoning film from such gases would have been obvious to one of ordinary skill in the art in light of the teachings of Tsui and either Xi et al. or Rossman et al. for the reasons set forth in paragraph 14 above.

19. Claims 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murugesh et al. (USPN 5,811,356) in view of Yoo et al. (USPN 6,479,098 B1), further in view of Rajagopalan et al. (USPN 6,274,058), Hander et al. (USPN 6,403,501), and Ying et al. (US 2003/0013314 A1), and in further view of Lee et al. (USPN 6,890,850) and Boeglin (USPN 5,061,514).

20. The combination of Murugesh et al., Yoo et al., Rajagopalan et al., Hander et al., and Ying et al. teaches all the limitations of **Claims 9 and 13** as set forth above in

paragraph 12, except for a method wherein the seasoning film comprises silicon carbide deposited from trimethyl silane and a carbon-containing gas. However, depositing a silicon carbide seasoning film from such gases would have been obvious to one of ordinary skill in the art in light of the teachings of Lee et al. and Boeglin et al. for the reasons set forth in paragraph 16 above.

Response to Arguments

21. Applicant's arguments filed on 6/13/2005 have been fully considered but they are not persuasive. Specifically, the applicant's arguments are moot in view of the new grounds of rejection set forth above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zehavi et al. (US 2002/0170487 A1) teaches pre-coating a fixture (e.g., wafer support tower) within a CVD reaction chamber with a silicon nitride film from chlorosilane and ammonia precursors prior to processing wafers in the chamber. Gupta et al. (USPN 6,020,035) teaches a process comprising cleaning a CVD chamber and then depositing a seasoning film (e.g., silicon dioxide from silane and oxygen precursor gases) on the inside of the chamber. Won et al. (US 2003/0143410 A1) teaches a process comprising cleaning a CVD chamber and then depositing a seasoning film (e.g., silicon nitride from silane and ammonia precursor gases) on the inside of the chamber. Yang et al. (US 2005/0214454 A1, corresponding to 10/810,106, filed on the

same date as the instant application and assigned to the same assignee) claims a process comprising cleaning a CVD chamber and then depositing a seasoning film (e.g., silicon or silicon carbide) on the interior surfaces thereof.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D. Markham whose telephone number is (571) 272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wesley D Markham
Examiner
Art Unit 1762

WDM

WDM

TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER